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| 10/564,423 | 01/11/2006 | Robert Fifield | 853663.434USPC | 8968 |

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| EXAMINER | |
|---|---|
| AHMED, ENAM | |

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/564,423 | FIFIELD ET AL. | |
| | Examiner | Art Unit | |
| | ENAM AHMED | 2112 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *02 April 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *5/27/10*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Final

This office action is in response to applicant's amendment filed on 4/2/10.

Response to Applicants arguments

The Applicant's arguments have been fully considered, and are not found persuasive.

Response to Applicants remarks

With respect to claims 1, 10 and 15, the applicant argues the Yoruza et al. reference does not teach the act of "initiating retransmission of the data packet onto the network. Further, Yoruzu operates on a wired point-to-point system, not a multi-path wireless network.

The Examiner respectfully disagrees with the statement, and points out Yoruzu teaches wherein an input device – 10, transmits data to a repeater – 12, and the repeater receives the data and does error checking, followed by storing the transmission data in a memory circuit 138. Further, when the POS – terminal or receiver, receiver the data from the repeater – 12, it checks to see if there are any errors, and if errors are found, then a retransmission request or NACK is sent to the repeater – 1, wherein the repeater re-sends the stored data. Finally, once the POS-terminal 14

receives the data, it stores the data and sends a clear signal to the repeater, and the repeater sends an ACK signal to the POS terminal and clears the data stored in the memory circuit 138. Thus, as is evident, the original transmission data had to be stored in the repeater prior which is cleared. As for the argument directed towards multi-path wireless network, the Examiner points out that it is clearly states that the invention is concerned with POS terminals, characterized by a portable type of wireless customer information input device, wherein the transmitting section sends stored information and customer data in response to a request – to – send signal, wherein once the repeater receives this signal it initiates retransmission of the stored data packet on the wireless network to the receiver or the POS terminal in this case. Further, it is also mentioned that a plurality of customers can input their information at the same time in parallel, by utilizing a respective wireless and portable input device, wherein the input devices are connected to the repeater through a plurality of paths and ultimately transmitted to the receiver or POS – terminal. Thus, the Yoruzu et al. reference teaches initiating retransmission of the data packet onto the network by the at least one repeater node responsive to receipt of the NACK signal by the at least one repeater node, the at least one repeater node initiating retransmission of the data packet by transmitting the stored copy of the forwarded data packet to the receiver (column 8, lines 40-44), (column 8, line 62 – column 9, line 10) and (column 2, line 37 – column 3, line 8).

## 35 U.S.C. 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-3 and 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Daines et al. (U.S. Pat. No. 6,192,422), Szymanski (U.S. Patent No. 6,851,086) in view of Yoruzu et al. (U.S. Patent No. 4,722,054).

With respect to claim 1, the Daines et al. reference teaches transmitting, by the transmitter, a data packet onto multiple paths of a network between the transmitter and the receiver at least one of the paths including at least one of the repeater transceiver node (see figure 2) and (column 4, line 60 – column 5, line 5); and forwarding, by the at least one repeater node, the data packet to the receiver and storing, by the at least one repeater node, a copy of the forwarded data packet (see fig. 2, repeater 10, Node, 16) and (column 4, line 60 – column 5, line 5). The Daines et al. reference does not teach issuing a no-acknowledge (NACK) signal over the network, by the receiver, if the data packet is not properly received by the receiver and initiating retransmission of the data packet onto the network by the at least one repeater node responsive to receipt of the NACK signal by the at least one repeater node, the at least one repeater node initiating retransmission of the data packet by transmitting the stored copy of the forwarded data packet to the receiver. The Szymanski reference teaches issuing a no-acknowledge (NACK) signal over the network, by the receiver, if the data packet is not properly received by the receiver (column 27, lines 14-19). The Yoruzu et al. reference teaches initiating retransmission of

the data packet onto the network by the at least one repeater node responsive to receipt of the NACK signal by the at least one repeater node, the at least one repeater node initiating retransmission of the data packet by transmitting the stored copy of the forwarded data packet to the receiver (column 8, lines 40-44), (column 8, line 62 – column 9, line 10) and (column 2, line 37 – column 3, line 8). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to have combined the references Daines et al. and Szymanski to incorporate issuing a no-acknowledge (NACK) signal over the network, by the receiver, if the data packet is not properly received by the receiver into the claimed invention. The motivation for issuing a no-acknowledge (NACK) signal over the network, by the receiver, if the data packet is not properly received by the receiver is for improved system performance. Thus, it would also have been obvious to one of ordinary skill in the art at the time of the invention was made to have combined the references Daines et al. and Szymanski with Yoruzu et al. to incorporate initiating retransmission of the data packet onto the network by the at least one repeater node responsive to receipt of the NACK signal by the at least one repeater node, the at least one repeater node initiating retransmission of the data packet by transmitting the stored copy of the forwarded data packet to the receiver into the claimed invention. The motivation for initiating retransmission of the data packet onto the network by the at least one repeater node responsive to receipt of the NACK signal by the at least one repeater node, the at least one repeater node initiating retransmission of the data packet by transmitting the stored copy of the forwarded data packet to the receiver is for improved system performance.

With respect to claim 2, the Daines et al. reference teaches wherein said retransmission is effected by all repeater nodes that forwarded the data packet and that receive the NACK signal (column 4, line 65 – column 5, line 5).

With respect to claim 3, the Daines et al. reference teaches in which the retransmitting step is affected by at least one of the repeater nodes and the transmitter (column 4, line 65 – column 5, line 5).

With respect to claim 6, the Daines et al. reference teaches wherein said retransmission of the data packet onto the network by the at least one repeater node includes using multiple paths available from the repeater node to the receiver (column 4, line 65 – column 5, line 5).

With respect to claim 7, all of the limitations of claim 1 have been addressed. The Daines et al. reference does not teach the receiver issuing an acknowledge ACK signal in the event that the data packet is correctly received by said receiver, the at least one repeater node forwarding the ACK signal to the transmitter. The Szymanski reference teaches the receiver issuing an acknowledge ACK signal in the event that the data packet is correctly received by said receiver, the at least one repeater node forwarding the ACK signal to the transmitter (column 26, lines 34-40). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to have combined

the references Daines et al. and Szymanski to incorporate the receiver issuing an acknowledge ACK signal in the event that the data packet is correctly received by said receiver, the at least one repeater node forwarding the ACK signal to the transmitter into the claimed invention. The motivation for the receiver issuing an acknowledge ACK signal in the event that the data packet is correctly received by said receiver, the at least one repeater node forwarding the ACK signal to the transmitter is for improved system performance.

Claims 10 and 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Diepstraten (U.S. Patent No. 5,339,316) in view of Yoruzu et al. (U.S. Patent No. 4,722,054).

With respect to claims 10 and 15, the Diepstraten reference teaches a receive module to receive data packets originating from the transmitter (column 4, lines 3-14); a transmit module to forward the data packets to another node in the network (column 6, line 46 – column 7, line 20). The Diepstraten reference does not teach a pending packet buffer to store copies of the forwarded data packets and a retransmission control circuit initiate retransmission over the network of data packets of previously forwarded data packets for which no-acknowledge (NACK) signals are received, responsive to the NACK signal being received by the repeater node, the retransmission control circuit configurable to initiate retransmission of the data packets for which NACK signals are received by transmitting the stored copies of these data packets. The Yoruzu et al.

reference teaches a pending packet buffer for storing copies of the forwarded data packets and a retransmission control circuit initiate retransmission over the network of data packets of previously forwarded data packets for which no-acknowledge (NACK) signals are received, responsive to the NACK signal being received by the repeater node, the retransmission control circuit configurable to initiate retransmission of the data packets for which NACK signals are received by transmitting the stored copies of these data packets (column 8, lines 40-44), (column 8, line 62 – column 9, line 10) and (column 2, line 37 – column 3, line 8). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to have combined the references Diepstraten and Yoruzu et al. to incorporate a pending packet buffer to store copies of the forwarded data packets and a retransmission control circuit initiate retransmission over the network of data packets of previously forwarded data packets for which no-acknowledge (NACK) signals are received, responsive to the NACK signal being received by the repeater node, the retransmission control circuit configurable to initiate retransmission of the data packets for which NACK signals are received by transmitting the stored copies of these data packets into the claimed invention. The motivation for a pending packet buffer to store copies of the forwarded data packets and a retransmission control circuit initiate retransmission over the network of data packets of previously forwarded data packets for which no-acknowledge (NACK) signals are received, responsive to the NACK signal being received by the repeater node, the retransmission control circuit configurable to initiate retransmission of the data packets for which NACK signals are received by transmitting the stored copies of these data packets is for improved system performance.

With respect to claim 16, the Diepstraten reference teaches wherein the retransmission control circuit, in the repeater node, is configurable to retransmit the data packets after a first retransmittal interval when no corresponding ACK or NACK signal is received (column 5, lines 41-60).

With respect to claim 17, the Diepstraten reference teaches wherein said transmitter node is configurable to retransmit the data packets after a second retransmittal interval that is longer than the first retransmittal interval, when no corresponding ACK or NACK signal is received (column 5, lines 41-60).

Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Diepstraten (U.S. Patent No. 5,339,316), Daines et al. (U.S. Pat. No. 6,192,422), Yoruzu et al. (U.S. Patent No. 4,722,054) in view of Gu et al. (U.S. Patent No. 6,845,089).

With respect to claim 18, all of the limitations of claim 15 have been addressed. The Diepstraten reference does not teach in which the transmitter does not retransmit the original data packet in the event of the issuing of a NACK signal by the receiver. The Gu et al. reference teaches in which the transmitter does not retransmit the original data packet in the event of the issuing of a NACK signal by the receiver (column 1, lines 39-50). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to have combined the references Diepstraten and Gu et al. to

incorporate in which the transmitter does not retransmit the original data packet in the event of the issuing of a NACK signal by the receiver into the claimed invention. The motivation for in which the transmitter does not retransmit the original data packet in the event of the issuing of a NACK signal by the receiver is to appropriately control an initial system access power to minimize response time and increase transmission efficiency (column 2, lines 4-6 – Gu et al. reference).

Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Diepstraten (U.S. Patent No. 5,339,316), Daines et al. (U.S. Pat. No. 6,192,422), Yoruzu et al. (U.S. Patent No. 4,722,054) in view of Early et al. (U.S. Pub. No. 2005/0241710).

With respect to claim 19, the Diepstraten reference does not teach wherein the transmitter does not listen for NACK signals relating to its own transmitted data packets. The Early et al. reference teaches wherein the transmitter does not listen for NACK signals relating to its own transmitted data packets ([0113]). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to have combined the references Diepstraten and Early et al. to incorporate wherein the transmitter does not listen for NACK signals relating to its own transmitted data packets into the claimed invention. The motivation for wherein the transmitter does not listen for NACK signals relating to its own transmitted data packets is to increase transmission efficiency.

Claim 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Diepstraten (U.S. Patent No. 5,339,316), Daines et al. (U.S. Pat. No. 6,192,422), Yoruzu et al. (U.S. Patent No. 4,722,054) in view of Syzmanski (U.S. Patent No. 6,851,086).

With respect to claim 11, all of the limitations of claim 10 have been addressed. The Diepstraten reference does not teach including purge circuit remove a stored data packet from the pending packet buffer responsive to an acknowledge (ACK) signal being received with respect to that data packet. The Szymanski reference teaches including purge circuit remove a stored data packet from the pending packet buffer responsive to an acknowledge (ACK) signal being received with respect to that data packet (column 3, lines 61 – 65). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to have combined the references Diepstraten and Syzmanski to incorporate including purge circuit remove a stored data packet from the pending packet buffer responsive to an acknowledge (ACK) signal being received with respect to that data packet into the claimed invention. The motivation for including purge circuit remove a stored data packet from the pending packet buffer responsive to an acknowledge (ACK) signal being received with respect to that data packet is to minimize latency.

With respect to claim 12, the Diepstraten reference does not teach wherein the retransmission control circuit is configurable to transmit the data packets over all available paths. The Daines et al. reference teaches wherein the retransmission control

circuit is configurable to transmit the data packets over all available paths (see fig. 2). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to have combined the references Diepstraten and Daines et al. to incorporate wherein the retransmission control circuit is configurable to transmit the data packets over all available paths into the claimed invention. The motivation for wherein the retransmission control circuit is configurable to transmit the data packets over all available paths is to minimize latency.

With respect to claim 13, the Diepstraten reference teaches a repeater node is configurable to forward ACK signals to the transmitter but not to forward NACK signals to the transmitter (column 4, lines 30-43).

With respect to claim 14, the Diepstraten reference teaches wherein the retransmission module is configurable to retransmit the data packets after first retransmittal interval when no corresponding ACK or NACK signal is received (column 5, lines 41-60).

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable Daines et al. (U.S. Pat. No. 6,192,422), Szymanski (U.S. Patent No. 6,851,086), Yoruzu et al. (U.S. Patent No. 4,722,054) in view of Gu et al. (U.S. Patent No. 6,845,089).

With respect to claim 4, the Daines et al. reference does not teach wherein the transmitter does not retransmit the data packet if the receiver issues the NACK signal. The Gu et al. reference teaches wherein the transmitter does not retransmit the data packet if the receiver issues the NACK signal (column 1, lines 39-50). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to have combined the references Daines et al. and Gu et al. to incorporate wherein the transmitter does not retransmit the data packet if the receiver issues the NACK signal into the claimed invention. The motivation for wherein the transmitter does not retransmit the data packet if the receiver issues the NACK signal is to appropriately control an initial system access power to minimize response time and increase transmission efficiency (column 2, lines 4-6 – Gu et al. reference).

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable Daines et al. (U.S. Pat. No. 6,192,422), Szymanski (U.S. Patent No. 6,851,086), Yoruzu et al. (U.S. Patent No. 4,722,054) in view of Early et al. (U.S. Pub. No. 2005/0241710).

With respect to claim 5, the Daines et al. reference does not teach wherein the transmitter does not listen for NACK signals relating to its own transmitted data packets. The Early et al. reference teaches wherein the transmitter does not listen for NACK signals relating to its own transmitted data packets ([0113]). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to have combined the references Daines et al. and Early et al. to incorporate wherein the

transmitter does not listen for NACK signals relating to its own transmitted data packets into the claimed invention. The motivation for wherein the transmitter does not listen for NACK signals relating to its own transmitted data packets is to increase transmission efficiency.

Claim 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Daines et al. (U.S. Pat. No. 6,192,422), Szymanski (U.S. Patent No. 6,851,086), Yoruzu et al. (U.S. Patent No. 4,722,054) in view of Diepstraten (U.S. Patent No. 5,339,316).

With respect to claim 8, all of the limitations of claim 1 have been addressed. The Daines et al. reference does not teach including retransmitting the data packet, by the repeater node, after first retransmittal interval if no ACK or NACK signal is received with respect to said forwarded data packet. The Diepstraten reference teaches including retransmitting the data packet, by the repeater node, after first retransmittal interval if no ACK or NACK signal is received with respect to said forwarded data packet (column 5, lines 41-60). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to have combined the references Daines et al. and Diepstraten to incorporate including retransmitting the data packet, by the repeater node, after first retransmittal interval if no ACK or NACK signal is received with respect to said forwarded data packet into the claimed invention. The motivation for including retransmitting the data packet, by the repeater node, after first retransmittal interval if no ACK or NACK signal is received with respect to said forwarded data packet is for an

efficient method for dealing with lost packets resulting from medium access collisions and interference of other sources (column 1, lines 48-51).

With respect to claim 9, all of the limitations of claim 8 have been addressed. The Daines et al. reference does not teach including the transmitter retransmitting the data packet after a second retransmittal interval if no ACK signal is received, the second retransmittal interval being greater than the first retransmittal interval. The Diepstraten reference teaches including the transmitter retransmitting the data packet after a second retransmittal interval if no ACK signal is received, the second retransmittal interval being greater than the first retransmittal interval (column 5, lines 41-60). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to have combined the references Daines et al. and Diepstraten to incorporate including the transmitter retransmitting the data packet after a second retransmittal interval if no ACK signal is received, the second retransmittal interval being greater than the first retransmittal interval into the claimed invention. The motivation for including the transmitter retransmitting the data packet after a second retransmittal interval if no ACK signal is received, the second retransmittal interval being greater than the first retransmittal interval is for an efficient method for dealing with lost packets resulting from medium access collisions and interference of other sources (column 1, lines 48-51).

## Conclusion

1. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Enam Ahmed whose telephone number is 571-270-1729. The examiner can normally be reached on Mon-Fri from 8:30 A.M. to 5:30 P.M. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Scott Baderman, can be reached on 571-272-3644. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have

questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

EA

7/1/10

/Scott T Baderman/

Supervisory Patent Examiner, Art Unit 2114